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**Technical requirements for
modularized charging cabin of EV**

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Technical requirements for modularized charging cabin of EV

1 Scope

This Standard specifies the basic composition, general requirements, identification, transport and storage of modularized charging cabin of EV (hereinafter referred to as the charging cabin).

This Standard is applicable to the design, manufacture and use of the charging cabin.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

GB 4208-2008, *Degrees of Protection Provided By Enclosure (IP Code)*

GB 7251.1-2013, *Low-voltage switchgear and control gear assemblies - Part 1: General rules*

GB 7251.3-2006, *Low-voltage switchgear and control gear assemblies - Part 3: Particular requirements for low-voltage switchgear and control gear assemblies intended to be installed in places where unskilled personnel can enter*

GB/T 19596-2004, *Terminology of electric vehicles*

GB/T 19826-2005, *General specification and safety requirement for DC power supply equipment of power projects*

GB/T 29317-2012, *Terminology of electric vehicle charging/battery swap infrastructure*

3 Terms and definitions

For the purposes of this document, the terms and definitions defined in GB/T 19596-2004 and GB/T 29317-2012 as well as the followings apply.

NOTE When using at higher altitudes, consideration shall be given to the effects of reduced dielectric strength, device breaking capacity, and reduced air cooling.

5.1.2 Power supply condition

- a) Input voltage: AC $220 \times (1 \pm 15\%)$ V or AC $380 \times (1 \pm 15\%)$ V;
- b) Frequency: 50 Hz $\pm$ 1 Hz.

5.2 Appearance

The coating layer on the surface of the charging cabin shall be evenly lighted, no foaming, no cracking, no falling off. No exposed sharp angles, no debris and sharp burrs.

5.3 Structural requirements

5.3.1 General

The charging cabin shall be constructed of materials capable of withstanding the mechanical, electrical, thermal and environmental stresses produced under specified conditions of use.

5.3.2 Rust prevention (antioxidation) protection

Double-layer rust prevention measures shall be taken for the iron casing of the charging cabin and the exposed iron brackets and parts. Non-ferrous metal casing shall be protected by oxidation protection or anti-oxidation treatment.

5.3.3 Insulation materials

The insulation material used in the charging cabin shall comply with the provisions of 8.1.3 of GB 7251.1-2013.

5.3.4 Mechanical strength

The chamber of the charging cabin shall have sufficient mechanical strength to withstand the stresses under normal use and foreseeable abnormal conditions.

5.3.5 Protection level

The protection level of the charging cabin shall comply with the provisions of IP31 in GB 4208-2008.

5.4 Functional requirements

5.4.1 Monitoring function

The charging cabin shall have local monitoring function by using CAN, RS 485

- c) Doors, covers, panels and similar parts shall be connected by protective conductors and main frame; the cross-sectional area of the protective conductor shall not be less than 2.5mm²;
- c) The grounding busbar and the charging cabin are connected to avoid (or penetrate the insulating layer) the paint layer to ensure an effective electrical connection.

5.5.5 Electric shock protection

The electric shock protection of the charging cabin shall comply with the provisions of 8.4 of GB 7251.1-2013 and GB 7251.3-2006.

5.6 Noise

When the charging cabin is in normal working condition, when the ambient noise is not more than 40dB (A), the noise limit shall not exceed 65dB(A).

6 Marks, transport, storage

6.1 Marks

The mark of the product shall be clear, firm and reliable. The content includes:

- a) Manufacturer's name and trademark;
- b) Product model and name;
- c) Product specifications and parameters;
- d) Date of manufacture;
- e) Product number or serial number;
- f) Safety warning sign.

6.2 Transport

Product packaging shall be adapted to automotive transport. During transport, loading-unloading, it shall not be subjected to severe mechanical collision, exposure, rain, or inversion. It shall be handled lightly, and it is strictly prohibited to throw, roll and heavy pressure.

6.3 Storage

The product shall be stored in a place where it is protected from direct sunlight, ventilation, and dryness; the surrounding air does not contain acid or other corrosive and explosive substances.

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Contact: Wayne Zheng, Sales@ChineseStandard.net

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